IN THE CLAIMS

1. (currently amended) An apparatus, comprising:

~~a)~~ a pipeline having a series of stages,~~; b) at least~~ one of said pipeline stages having ~~an~~ a content addressable memory interface for coupling to a content addressable memory that stores a pointer to input ~~capacity~~ flow information for a packet, said pointer to said input ~~capacity~~ flow information obtainable from said content addressable memory with information from said packet's ~~packet~~ header, ~~information; and; c) at least~~ ~~one~~ another of said pipeline stages having ~~an~~ a first interface that receives ~~packet size~~ information indicative of said packet's size ~~, an~~and a second interface that receives said input ~~capacity~~ flow information, said input flow information comprising a pointer to information describing an input bucket for said packet, said other pipeline stage further comprising a register to store said input bucket information and policing ~~and comparison~~ logic coupled to both said first interfaces and said register.

2. (currently amended) The apparatus of claim 1 wherein said input capacity information is stored within an input flow table that is stored within ~~said~~ a second memory ~~device~~.

3. (currently amended) The apparatus of claim 1 wherein said ~~input capacity information is part of a user input flow, said user~~ input flow ~~having~~ information further comprises priority information.

4. (currently amended) The apparatus of claim 1 wherein said ~~memory device further comprises~~ input flow information further comprises a tagging policy.

5. (currently amended) The apparatus of claim 1 further comprising a discard tag output coupled to said comparison logic, said discard tag output to indicate whether or not ~~indicative if~~ said packet~~s~~ conforms to a user input rate, said input capacity based upon said user input rate.

6. (currently amended) A method, comprising:

a) presenting packet header information from a packet and packet size information for said packet to ~~one or more~~ a pipeline that comprises multiple stages~~, said packet header information and said packet size information corresponding to a packet~~;

b) ~~determining within a~~ identifying at one of said stages ~~associated with said pipeline~~, with said packet header information, ~~input capacity~~ where input flow information for said packet is located;

c) fetching said input flow information, said input flow information identifying where input capacity information for said packet is located;

d) fetching said input capacity information;

e) comparing, within another of said stages, ~~associated with said pipeline,~~ ~~said~~ an input capacity for said packet with said packet's size~~;~~ and ~~d)~~ indicating ~~from a stage associated with said pipeline~~ whether said packet is conforming or non-conforming based upon said comparison, said input capacity calculated from said input capacity information.

7. (currently amended) The method of claim 6 wherein said identifying further comprisinges looking up said input ~~capacity~~ flow information from ~~an input flow table~~ a content addressable memory with said packet header information.

8. (currently amended) The method of claim 6 wherein said user input flow ~~further comprising extracting priority~~ information ~~with said input capacity~~ further comprises priority information.

9. (currently amended) The method of claim 8 further comprising placing said priority information into a control label that is made accessible to other stages within said pipeline.

10. (original) The method of claim 6 further comprising, if said packet is non-conforming, indicating whether said packet must be discarded.

11. (canceled).

12. (canceled)

13. (currently amended) An apparatus for regulating traffic offered to a network by a first user of said network and a second user of said network, said apparatus comprising:

a) a first pipeline stage that operates to retrieves, in response to a first packet being sent from said first user to said network, a first input flow identifier that points to a first memory location where a first input flow is located, said first input flow allocated to said first user, said first input flow having a first input rate; and,

b) a second pipeline stage that:

i) operates to retrieves

one or more parameters that describe said first input rate so that it can be determined if said sending of said first packet conforms to said first input rate

ii) while

said first pipeline stage operates to retrieves a second input flow identifier that points to a second memory location where a second input flow is located, said second input flow allocated to said second user, said second input flow having a second input rate, said retrieving of a second input flow identifier in response to a second packet being sent from said second user to said network.

14. (previously presented) The apparatus of claim 13 further comprising a memory for storing said input flow identifier, said memory coupled to said first pipeline stage.

15. (currently amended) The apparatus of claim 14 wherein said memory further comprises a ~~ternary~~ content addressable memory (~~T~~CAM).

16. (currently amended) The apparatus of claim 15 wherein said first packet further comprises a header and said ~~T~~CAM is configured as a lookup table that provides said first input flow identifier in response to said first pipeline stage providing, as an input to said ~~T~~CAM lookup table, at least a portion of information found within said header.

17. (previously presented) The apparatus of claim 13 further comprising a register that stores a control label, said register coupled to said first and second pipeline stages, said first packet having a header, said control label having information found within said header.

18. (currently amended) The apparatus of claim 17 wherein said header information further comprises a Source Port (SP) associated with an Internet Protocol (IP) header.

19. (currently amended) The apparatus of claim 17 wherein said header information further comprises a Destination Port (DP) associated with an Internet Protocol (IP) header.

20. (currently amended) The apparatus of claim 17 wherein said header information further comprises a Source Address (SA) associated with an Internet Protocol (IP) header.

21. (currently amended) The apparatus of claim 17 wherein said header information further comprises a Destination Address (DA) associated with an Internet Protocol (IP) header.

22. (currently amended) The apparatus of claim 17 wherein said header information further comprises a Next Hop Address (NHA) associated with an Internet Protocol (IP) header.

23. (currently amended) The apparatus of claim 17 wherein said header information further comprises Layer 2 information.

24. (currently amended) The apparatus of claim 23 wherein said header information further comprises a Data Link Connection ID (DLCI) associated with a Frame Relay packet.

25. (previously presented) The apparatus of claim 17 wherein said control label further comprises control information formatted by a packet aggregation layer.

26. (previously presented) The apparatus of claim 25 wherein said control information further comprises a packet identifier that identifies where said first packet may be found within a packet buffer.

27. (previously presented) The apparatus of claim 25 wherein said control information further comprises a length indicator that indicates the size of said first packet.

28. (previously presented) The apparatus of claim 13 wherein said one or more parameters that describe said first input rate further comprise a token number and a token rate, wherein said token number corresponds to an amount of data, wherein said token rate corresponds to a number of tokens that are to be added to said token number per unit of time.

29. (previously presented) The apparatus of claim 13 wherein said first input flow further comprises a priority parameter that describes the priority of said first packet within said network.

30. (previously presented) The apparatus of claim 29 wherein said priority parameter further comprises a Type of Service (TOS) value to be placed into a header of said first packet prior to entry of said first packet into said network.

31. (previously presented) The apparatus of claim 13 wherein said first input flow further comprises a memory pointer that points to a third memory location where said one or more parameters that describe said first input rate are located.

32. (currently amended) A method for regulating traffic offered to a network by a first user of said network and a second user of said network, said method comprising:

a) using a first pipeline stage to retrieve~~ing~~, in response to a first packet being sent from said first user to said network, a first input flow identifier that points to a first memory location where a first input flow is located, said first input flow allocated to said first user, said first input flow having a first input rate; and

b) using a second pipeline stage to retrieve~~ing~~

one or more parameters that describe said first input rate so that it can be determined if said sending of said first packet conforms to said first input rate

while using said first pipeline state to retrieve~~ing~~

a second input flow identifier that points to a second memory location where a second input flow is located, said second input

flow allocated to said second user, said second input flow having a second input rate, said retrieving of a second input flow identifier in response to a second packet being sent from said second user to said network.

33. (currently amended) The method of claim 32 wherein said first input flow ~~further~~ comprises a pointer to a third memory location where said one or more parameters that describe said first input rate are located.

34. (previously presented) The method of claim 33 further comprising retrieving said first input flow with said first input flow identifier and using said pointer to said retrieve said one or more parameters that describe said first input rate.

35. (previously presented) The method of claim 32 wherein said one or more parameters that describe said first input rate further comprise a token number and a token rate, wherein said token number corresponds to an amount of data, wherein said token rate corresponds to a number of tokens that are to be added to said token number per unit of time.

36. (currently amended) The method of claim 35 further comprising multiplying said token rate by an elapsed time between said sending of said first packet and a sending of a third packet from said first user, said third packet sent immediately

prior to said first packet in ~~regards to~~ a sequence of packets sent by said first user.

37. (previously presented) The method of claim 36 further comprising adding said token number to said multiple of said token rate and said elapsed time in order to determine a number of tokens that corresponds to an amount of data that conforms to said first input rate.

38. (previously presented) The method of claim 32 further comprising, in order to said determine if said sending of said first packet conforms to said first input rate, comparing a first value with a second value, said first value representing an amount of data that can be carried by said first packet yet still conform to said first input rate, said second value representing the amount of data said packet carries.

39. (previously presented) The method of claim 38 further comprising tagging said first packet as conforming if said first value is greater than said second value.

40. (previously presented) The method of claim 38 further comprising tagging said first packet as non-conforming if said first value is less than said second value.

41. (previously presented) The method of claim 32 wherein said first input flow further comprises a priority parameter that describes the priority of said first packet within said network.

42. (previously presented) The method of claim 41 wherein said priority parameter further comprises a Type of Service (TOS) value to be placed into a header of said first packet prior to entry of said first packet into said network.

43. (new) An apparatus for regulating traffic offered to a network by a first user of said network and a second user of said network, said apparatus comprising:

a) a first pipeline stage coupled to a first memory, said first memory to provide to said first pipeline stage:

(i) during a first pipeline cycle:

a first input flow identifier;

(ii) during a second pipeline cycle:

a second input flow identifier; and

b) a second pipeline stage that follows said first pipeline stage, said second pipeline stage comprising:

1) a data bus to receive from a second memory:

(i) during said second pipeline cycle and from a location of said second memory pointed to by said first output flow identifier:

parameters belonging to said first input flow;

(ii) during a third pipeline cycle and from a location of said second memory pointed to by said second output flow identifier:

parameters belonging to said second input flow;

2) register space in which to store:

(iii) during said second pipeline cycle:

parameters from which a first amount of data can be calculated, said first packet being in conformance with said first input flow's input rate if said first packet's size is not greater than said first amount of data;

(iv) during said third pipeline cycle:

parameters from which a second amount of data can be calculated, said second packet being in conformance with said second input flow's input rate if said second packet's size is not greater than said second amount of data;

3) logic circuitry to determine:

(v) during said second pipeline cycle:

if said first packet is in conformance with said first input flow's input rate;

(vi) during said third pipeline cycle;

if said first packet is in conformance with said first input flow's input rate.

44. (new) The apparatus of claim 43 further comprising a third pipeline stage that follows said second pipeline stage, said third pipeline stage coupled to a content addressable memory capable of providing:

(i) during said third pipeline cycle:

a first output connection identifier for said first packet;

(ii) during a fourth pipeline cycle:

a second output connection identifier for said second packet.

45. (new) The apparatus of claim 44 further comprising fourth and fifth pipeline stages that respectively follow said third pipeline stage, said fourth and fifth pipeline stages capable of regulating traffic offered by said network to a third user of said network and a fourth user of said network, where:

said fourth pipeline stage further comprises a memory interface capable of receiving:

(i) during said first pipeline cycle:

a first output flow identifier;

(ii) during said second pipeline cycle:

a second output flow identifier; and

said fifth pipeline stage further comprises:

1) a second data bus capable of receiving:

(i) during said second pipeline cycle and from a memory location pointed to by said first output flow identifier:

a first TOS parameter for a first output packet, said first output packet destined for said third user;

(ii) during said third pipeline cycle and from a memory location pointed to by said second output flow identifier:

a second TOS parameter for a second output packet, said second output packet destined for said fourth user;

2) register space in which to store:

(iii) during said second pipeline cycle:

a first parameter from which a first delay for said first packet that is consistent with said first output flow can be calculated;

(iv) during said third pipeline cycle:

a second parameter from which a second delay for said second packet that is consistent with said second output flow can be calculated.

3) logic circuitry to calculate:

(v) during said second pipeline cycle:

said first delay;

(vi) during said third pipeline cycle;

said second delay.

46. (new) A method, comprising:

a) during a first pipeline cycle:

with a first pipeline stage: identifying a memory location where input flow information for a packet can be found, said packet sent from a user of a network to said network;

with a second pipeline stage that follows said first pipeline stage: identifying a memory location where output flow information for a second packet can be found, said second packet to exit said network so that it can be received by a second user of said network;

b) during a second pipeline cycle that follows said first pipeline cycle:

with a third pipeline stage that follows said first pipeline stage but precedes said second pipeline stage: fetching said input flow information and determining if said first packet conforms to said input flow's input rate;

with a fourth pipeline stage that follows said second pipeline stage: fetching said output flow information and calculating a delay for said second packet that conforms to said output flow's output rate.

47. (new) The method of claim 46 further comprising:

c) during a third pipeline cycle that follows said second pipeline cycle:

with a fourth pipeline stage that follows said third pipeline stage but precedes said second pipeline stage: looking up an output port for said first packet.

48. (new) A machine readable medium containing a description of a semiconductor circuit design for regulating traffic offered to a network by a first user of said network and a second user of said network, said description comprising a description of:

a) a first pipeline stage to lookup a first input flow identifier, where, said first input flow identifier points to a first memory location where parameters for a first input flow are located, where said first input flow is for a first packet that is sent from said first user and stored into a packet buffer, and where, said first input flow is characterized at least by a first input rate; and,

b) a second pipeline stage having policing logic circuitry coupled to register storage space, said register storage space to provide to said policing logic circuitry a characteristic of said first input rate, said second pipeline stage to:

(i) determine

whether said first packet conforms to said first output rate,

(ii) during a same pipeline cycle in which

said first pipeline stage looks up a second input flow identifier that points to a second memory location where

parameters for a second input flow are located, where, said second input flow is for a second packet that is sent from said second user and stored into said packet buffer, and where, said second input flow is characterized at least by a second output rate.

49. (new) The machine readable medium of claim 48 wherein said description is a GDS-II description.

50. (new) The machine readable medium of claim 48 wherein said description is an RTL level description.